Science report

Photo fix prolongs lives of flowers

By Pearce Wright
Science Editor

The life expectancy of cut flowers has been increased by up to 20 days by scientists investigating ways of improving the yield and quality of crops and flowers grown under glass. The method of extending the life of certain varieties of carnations, which usually last at best between 10 and 14 days, was achieved by dipping the stems for half an hour into discarded hypo, the chemical mixture containing sodium thiosulphate used as a fixer in developing photographic film.

The discovery, by Dr R. Nichols and Mrs Carol Frost, is a by-product of studies at the Glasshouse Crops Research Institute at Littlehampton, Sussex, into the mechanisms that control the various stages of aging and growth of plants. They describe the unusual effects of a hypo elixir in the institute's annual report.

Their work was derived from earlier research in which new forms of pesticides were improved by incorporating very tiny traces of silver compounds. But the recent experiments, which used diluted quantities of hypo as a cheap source of silver salts, indicated that the protection provided by adding silver was more complicated than the growing of healthier plants safeguarded by a better pesticide.

The silver in the photographic chemical has been leached from the unexposed part of the film. But the amount in a photographic tank of hypo is many times more than that needed for treating cut flowers. The concentration of silver in a carnation is less than one part in a million.

Although this treatment of flowers to extend their vase-life is of commercial importance, the question of how it increases longevity remains unanswered. Analysis of sections of plants by electron microscopy shows the places in particular cells to which the silver atoms migrate. These are the sites responsible for the synthesis of ethylene, the naturally produced substance causing plants to wilt.

Since the production of ethylene is stimulated when the fruit of a plant has set and there is no need to retain the bloom to attract pollination, the action of silver is thought to suppress the hormone which triggers that process of senescence.

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The Times (London, England), Tuesday, Jan 19, 1982; pg. 2; Issue 61135. (361 words)

Category: News

Gale Document Number:CS35490355